



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,765	04/04/2001	Mary Dykstra Havlicek	016499-526	1454

7590

04/10/2003

E. Joseph Gess, Esq.  
BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

EXAMINER

LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
----------	--------------

1754

6

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

824765

Applicant(s)

Havlicek et al

Examiner

Lange

Group Art Unit

1754

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-24 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-24 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some\* ☐ None of the:
  - ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 5
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit 1754

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Harris. Harris discloses a method for treating an ion exchange resin by subjecting the resin to 10 cycles of alternate treatments with hydrochloric acid, wherein the treatments with hydrochloric acid are separated by back washings with deionized water. One full cycle of the treatment comprises immersing the ion exchange resin into hydrochloric acid for one minute, washing with deionized water until the wash water is neutral, immersing the ion exchange resin in sodium hydroxide for one minute, and washing the ion exchange resin with deionized water again until the wash water is neutral. (See the paragraph bridging columns 4 and 5.)

Claims 4-10 and 12-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Harris. Harris is relied upon as discussed hereinbefore. The limitations recited in claims 4-10 and 12-14 would be prima facie obvious over Harris, since it would be prima facie obvious to employ any known or conventional ion exchange resin in the process, since Harris is directed

Art Unit 1754

broadly to treating any ion exchange resin, and it would also be within the skill of one of ordinary skill in the art to determine suitable or optimum contacting times and molar ratios of hydrochloric acid to water in the process of Harris.

Claims 1, 2 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by either Rahman et al. '789 or Rahman et al. '570. Rahman et al. '570 and Rahman et al. '789 both disclose treatment of ion exchange resins with water and then a mineral acid solution to reduce the metal ion level. The ion exchange resin is initially rinsed with deionized water, followed by a mineral acid solution such as a sulfuric acid solution, rinsed again with deionized water, treated again with the mineral acid solution and once more rinsed with deionized water. (See column 4, lines 51-67 of Rahman et al. '789; and column 7, lines 6-20 of Rahman et al. '570.)

Claims 3-10 and 12-14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Rahman et al. '789 or Rahman et al. '570. Rahman et al. '789 and Rahman et al. '570 are relied upon as discussed hereinbefore. Regarding claim 3, it would be prima facie obvious to employ a hydrochloric acid solution for treating the ion exchange resin of either Rahman et al. '789 or Rahman et al. '570, since both references disclose broadly at the aforementioned passages that any mineral acid may be employed. Regarding claims 4-10 and 12-14, it would be within the skill of

Art Unit 1754

one of ordinary skill in the art to treat any known or conventional ion exchange resin according to the process of either Rahman et al. '570 or Rahman et al. '789, since both references are directed broadly to treating any ion exchange resin. It would also be obvious to determine suitable or optimum contact times and hydrochloric acid solution concentrations in the process of either Rahman et al. '789 or Rahman et al. '570.

Claims 15-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shiga et al. or Saito et al. in view of Dias et al. Shiga et al. and Saito et al. both disclose the purification of aqueous hydrogen peroxide solutions by passing the solutions through ion exchange resins. (See the Abstract and column 2, lines 22-61 of Shiga et al., and the Abstract and column 2, lines 8-56 of Saito et al.) The difference between the processes of Saito et al. and Shiga et al., and that recited in claims 15-<sup>24</sup>~~25~~, is that Saito et al. and Shiga et al. do not disclose that the ion exchange resin is one which has been preconditioned by a method comprising the steps of rinsing the resin with deionized water, contacting the resin with an acid solution, and rinsing the acid treated resin with deionized water. Dias et al. disclose a method for extracting leachable contaminants from ion exchange resins by exposing the resins to supercritical carbon dioxide for a sufficient interval of time to allow at least a portion of the leachable contaminants to be solubilized by the

Art Unit 1754

supercritical carbon dioxide, followed by removal from the resin of the supercritical carbon dioxide having the leachable contaminants dissolved therein. (See the Abstract and column 1, line 51 - column 2, line 20.) It would be prima facie obvious to employ the ion exchange resin of Dias et al. as the ion exchange resin in the process of either Shiga et al. or Saito et al., since the processes of Saito et al. and Shiga et al. are directed to the purification of hydrogen peroxide solutions for use in the electronics industry, and Dias et al. teach at column 1, lines 51-60 that the invention provides a method for removing unwanted contaminants from ion exchange resins by exposing the resins to supercritical carbon dioxide, which process is capable of reducing the levels of impurities in commercial ion exchange resins for use in the semiconductor and pharmaceutical industries. Accordingly one would be motivated to employ the ion exchange resins of Dias et al., which have been treated with carbon dioxide gas, as the ion exchange resin in the process of either Saito et al. or Shiga et al., to provide a more highly pure hydrogen peroxide solution for use in the electronics industry, which requires a highly pure solution. Although Dias et al. do not disclose a process for treating a resin which comprises the steps of rinsing the resin with deionized water, contacting the resin with an acid solution, and rinsing the acid-treated resin with deionized water, no distinction is seen

Art Unit 1754

between an ion exchange resin treated according to such process, and the ion exchange resin treated according to the process of Dias et al., since Dias et al. teach at column 1, lines 51-60 that the process reduces the levels of impurities in the ion exchange resins to levels low enough to permit the use of the treated resins in critical applications, such as the semiconductor and pharmaceutical industries.

Claim 7 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is indefinite as to whether "same type" would mean that the second acid would have to have the same chemical formula as the first acid, or whether it could be any mineral acid, for example.

The other references are made of record for disclosing methods for treating ion exchange resins with acids and/or deionized water.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can

Serial No. 09/824,765

-7-

Art Unit 1754

be reached on (703) 308-3837. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

April 7, 2003

*Wayne A. Langel*  
WAYNE A. LANGEL  
PRIMARY EXAMINER